Name_____ Date_____

291 Chapter 7.1-7.4 Review Problems

State the degree and leading coefficient for the following polynomials.

1. $2x^2 – 6x^3 + 5x^4 – 8$ Degree_____ Leading coefficient_____

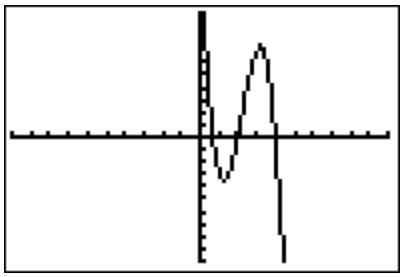
2. $7x^8 + 3x^3 – 2x$ Degree_____ Leading coefficient_____

3. $4x^4 + 3x^5 – 2x^3 + 10$ Degree_____ Leading coefficient_____

For #s 4-6, answer the following questions:

a. Is the function odd or even?
b. Describe the end behavior.
c. State the number of real zeros.

#4



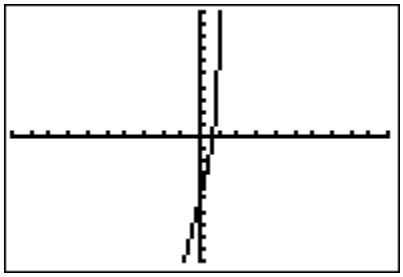
4. a._____

b. As $x \to +\infty$, then $f(x) \to$_____

As $x \to -\infty$, then $f(x) \to$_____

c._____

#5



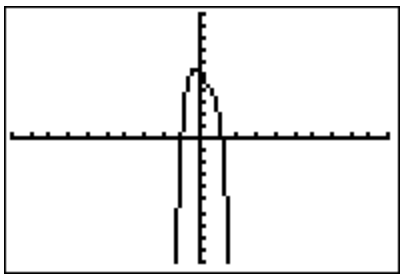
5. a._____

b. As $x \to +\infty$, then $f(x) \to$_____

As $x \to -\infty$, then $f(x) \to$_____

c._____

#6



6. a._____

b. As $x \to +\infty$, then $f(x) \to$_____

As $x \to -\infty$, then $f(x) \to$_____

c._____

Solve using quadratic techniques. (Do the work on loose leaf.)

7. $x^5 - 64x = 0$ _____ 8. $x^3 + x^2 + 12x + 12 = 0$ _____

9. $x^4 - 13x^2 + 40 = 0$ _____ 10. $x^{\frac{2}{3}} + 14x^{\frac{1}{3}} + 24 = 0$ _____

11. $x^3 - 64 = 0$ _____

Graph the following function on your calculator. If they exist, calculate the real zeros, relative maximum and relative minimum. (Round to three decimal places)
Note: You may need to adjust your window or zoom to see the full graph

12. $f(x) = 3x^3 + 4x^2 - 2x - 4$

Zeros_____ Max_____ Min_____

13. $f(x) = -2x^4 + 3x^2 - x + 1$

Zeros_____ Max_____ Min_____

14. Find k such that…
(x-2) is a factor of $f(x) = 3x^4 - 6x^3 + x^2 - 3x + k$.

15. Find k such that….
(x + 3) has a remainder of 5
$f(x) = -4x^3 - 6x^2 - 3x + k$

16. Use synthetic substitution to find P(2). $P(x) = 4x^5 - 3x^3 + 2x - 3$.

17. Sketch an odd function with a positive leading coefficient and a degree of 5. (Sketch the max number of turning points.)

18. Sketch an even function with a negative leading coefficient and a degree of 6. (Sketch the max number of turning points.)